Steering Committee Adopts Management Zones for 1991

During 1991 four management zones will be established within the AIPM project area. The boundaries between these zones will follow county lines.

Zone I— The male moth trap catch in this zone currently averages 500 moths per trap or greater. The management objective is to prevent damage which exceeds management objectives. Male moth populations will be monitored on a 6 kilometer grid and egg mass surveys will be conducted only in priority areas. No action, Diflubenzuron, single or double applications of Bt and double applications of Gypchek are the allowable intervention tactics.

Zone II— Male moth trap catch in this zone currently averages between 200 and 500 moths per trap. The management objective here is to maintain populations below 250 egg masses per acre and minimize the spread into zone 3 and beyond. Male moth populations will be monitored on a 2- or 3-kilometer grid and egg mass surveys will be conducted only in priority areas. The allowable intervention tactics are the same as those listed for Zone 1.

Zone III— Current male moth trap catch averages here are between 10 to 200 moths per trap. The management objectives are:

1) to detect populations below 50 egg masses per acre,
2) to maintain these populations at or below that level,
3) to reduce natural and artificial spread.

Male moth populations will be monitored on a 2- or 3- kilometer grid with egg mass surveys based on trap catches. No action, Diflubenzuron, double applications of Bt, Gypchek, pheromone flakes, inherited sterility and mass trapping are the allowable intervention tactics.

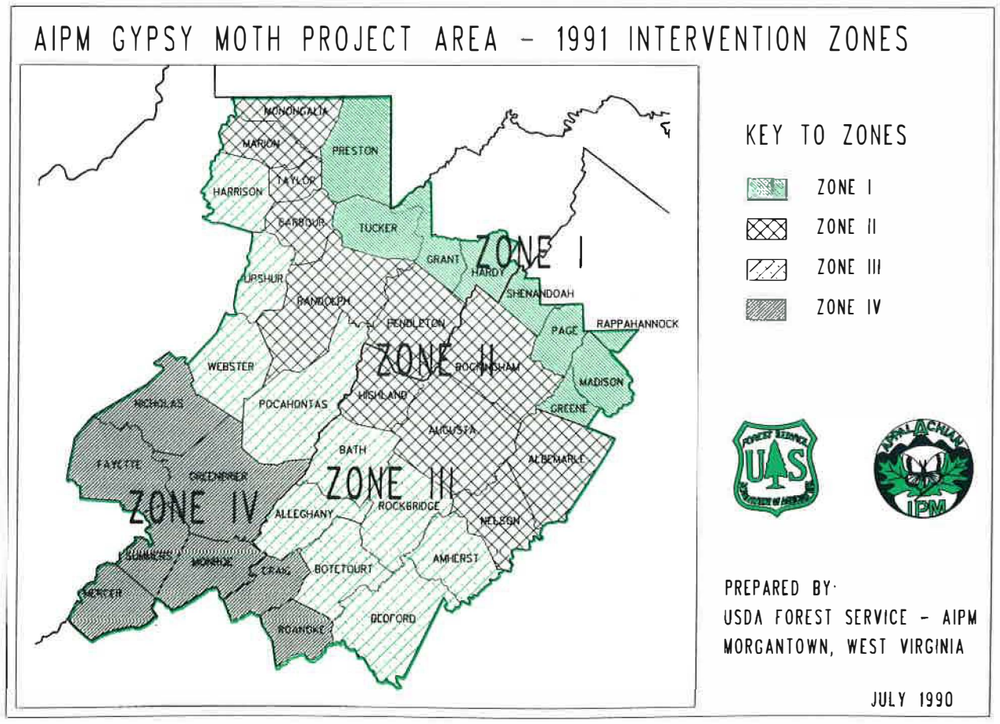
Zone IV— Male moth trap catches currently average less than 10 moths per trap. The management objective is intensive detection and management of populations to reduce natural and artificial spread. Male moth populations will be monitored on a 2- or 3-kilometer grid and at 250 meter or 500 meter grid intervals at delimitating sites. No action, Diflubenzuron, double applications of Bt, Gypchek, pheromone flakes, inherited sterility and mass trapping are the allowable intervention tactics.

In adopting the concept, the Steering Committee recognized that for zones 1 and 2, it is essential for land managers to identify priority areas for potential treatment before egg mass surveys are conducted. This will allow survey crews to concentrate their effort on those areas with highest priority, thus allowing for greater efficiency in survey.

Figure 1 shows the location of the zones for 1991. These zones were developed by the AIPM Planning Committee using the 1989 male moth data and the projected spread in 1990.

DICK REARDON

Figure 1



APPALACHIAN GYPSY MOTH INTEGRATED PEST MANAGEMENT
DEMONSTRATION PROJECT NEWS

TERRY FREY - EDITOR VOLUME 3, ISSUE 8 AUGUST 1990

Program Manager's Column

"It's time for a 'Gut Check.'" A 'Gut Check' for those who haven't kept up on recent slang trends is a review of where we are and what we are doing and to assess our ability and desire to continue the present course. We've completed the 'gut check' of AIPM, beginning last winter with the AIPM Review. It was confounded by the gypsy moth itself as it began a new outbreak cycle. The bottom line is that some changes are being made in the way we approach dealing with the pest in the project area.

The gypsy moth enjoyed a very good year in 1989 and again in 1990. Defoliation increased nationally about 4-fold in 1989 and preliminary estimates are that it will double or perhaps triple the 1989 defoliation total this year. These tremendous increases resulted in more rapid than expected movement of the pest into the AIPM area. To counteract this threat, the Planning Committee proposed a 'Zonal Concept' be adopted within the Project Area. This concept has been accepted and is fully described in another section of this Newsletter. Adoption of this approach allows us to better define the threat to various resources in the project area and to systematically apply our survey and intervention resources to accomplish our objectives.

continued on page 3

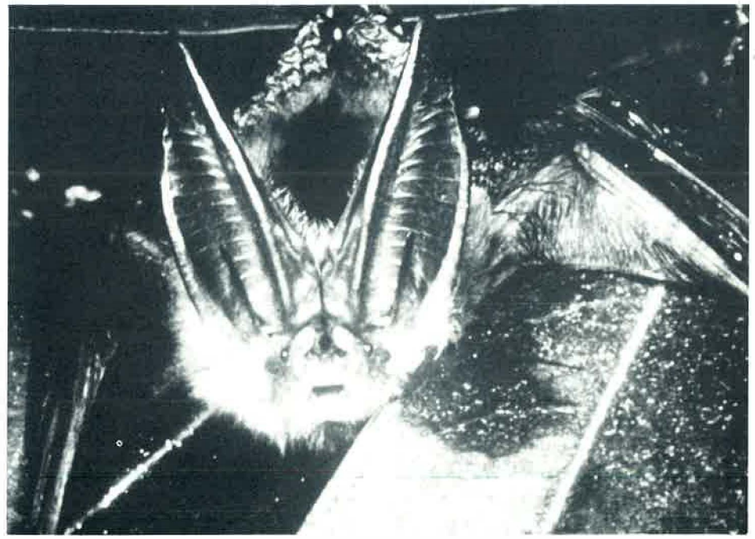
AIPM Sponsored Study Investigates Defoliation/Bt Impacts

Millions of acres of forest in the northeastern U.S. have been defoliated by gypsy moth larvae. Defoliation may reduce the food supply for many native species of Lepidoptera (moths and butterflies) and could adversely affect their populations. Because Lepidoptera are a major component in the diet of many vertebrates (including birds and bats), population reductions of this group of insects could have profound effects further up the food chain.

One of the methods available for controlling gypsy moth populations and reducing defoliation is the application of Bacillus thuringiensis (Bt). While Bt has been shown to have no direct toxicity to non-target vertebrates, its effects on non- target invertebrates, especially Lepidoptera, are poorly known.

The effects of Bt on non-target Lepidoptera is of great interest to entomologists, environmentalists, and others and has been addressed in the AIPM Final Environmental Impact Statement as a research need.

The concern about the potential effects of gypsy moth defoliation and Bt application on populations of native Lepidoptera are of particular relevance



Endangered Virginia Big-eared Bat

continued on page 2

AIPM SPONSORED STUDY INVESTIGATES DEFOLIATION/BT IMPACTS . . .

continued from page 1

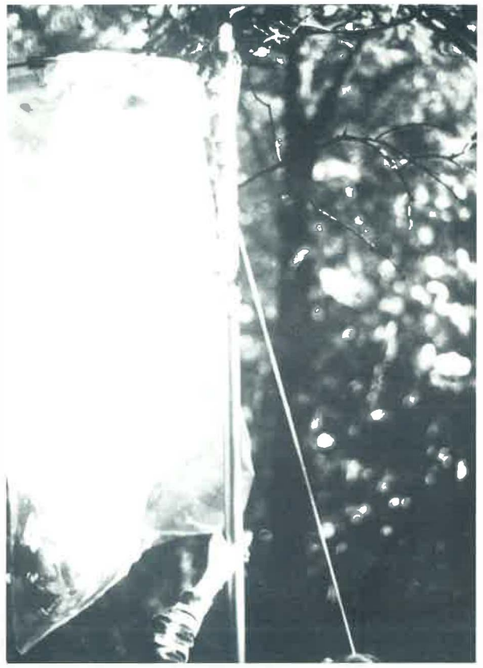
in West Virginia, because the gypsy moth's range has expanded into that of the endangered Virginia Big-eared Bat. This bat is potentially at risk because studies show that moths compose greater than 95% of its diet. Food reductions resulting from either gypsy moth defoliation or Bt applied to prevent defoliation could negatively impact this already endangered bat.

A study is being performed under a cooperative agreement between AIPM, NE Forest Experiment Station, and West Virginia University. The objectives of this study are to determine the effect of Bt treatments as well as gypsy moth defoliation on non-target native larval and adult Lepidoptera, with special focus on food of the endangered Virginia Big-eared Bat (Plecotus townsendii virginianus).

Malaise trap samples are collected from each site every week.

The study area is located almost entirely northern Grant County, West Virginia. The study plots are approximately 50 acres in size. Food available to the bats are evaluated in 3 known maternity colonies. The 4 treatments will be: unsprayed and defoliated; sprayed with Bt and undefoliated; sprayed with Bt and defoliated and unsprayed and undefoliated. There are 6 blocks and a total of 24 study sites.

During the first year (1990), all sites are being sampled to determine baseline Lepidoptera populations. Each site is intensively sampled by light traps, Malaise traps, and pole pruning. Light and Malaise trap sampling for adult Lepidoptera take place both at the edge and in the interior of each site. Each block of sites is sampled by light traps once every two weeks. At each site, samples are taken every 2 hours from dusk to just before dawn. Malaise trap samples are collected from each site every week. Pole pruning for Lepidoptera larvae is conducted weekly at each site. A minimum of 10 samples per site are taken from the low/mid canopy. Also, benthic (or bottom dwelling) macroinvertebrates are collected from areas with a suitable water supply to assess any possible effects of treatment to non-target aquatic insects.



Pole pruning for Lepidoptera larvae. All samples are preserved for identification and counting.

In 1991, two sites from each of the six blocks of study sites will be treated with Bt (one with gypsy moth defoliation and one without defoliation). Bt will be applied at the maximum rate in early to mid-May. Following application, Lepidoptera and macroinvertebrate sampling will continue as in 1990. During the 3rd year, no Bt will be applied and Lepidoptera and macroinvertebrates will be sampled as in years 1 and 2. At least one year post-treatment is necessary because many lepidopterans require more than one year to mature and there is potential for Bt to produce effects for several years post-treatment.

Participants in the project include:

DR. ROBERT C. WHITMORE, Ecologist, Principal Investigator, West Virginia University, Division of Forestry

BRADLEY E. SAMPLE, Graduate Research Assistant/Entomologist, West Virginia University, Division of Forestry

DR. LINDA BUTLER, Entomologist, West Virginia University, Division of Plant and Soil Sciences

DR. JOHN W. PEACOCK, Entomologist U.S. Forest Service, NE Forest Experiment Station Dr. Jack E. Coster, Director, West Virginia University, Division of Forestry

AMY CREIGHTON

The DEMONSTRATION PROJECT NEWS is published Monthly by the Appalachian Integrated Pest Management (AIPM) Project. The first large scale project to employ integrated pest management against the gypsy moth, AIPM's mandate is to SLOW THE SPREAD and MINIMIZE THE ADVERSE IMPACT of the gypsy moth in a 38 county, 12.8 million acre area of Virginia and West Virginia.

Contributions, questions or comments may be sent to:

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FAX: (304) 599-7041

COOPERATING ORGANIZATIONS
USDA Forest Service
- Northeastern Area State & Private Forestry (NA)
- Region 8 Forest Pest Management (R8-FPM)
- Northeastern Forest Experiment Station
- Monongahela National Forest (MNF)
- George Washington National Forest (GWNF)
- Jefferson National Forest (JNF)

Shenandoah National Park (SNP)
Blue Ridge Parkway (BRP)
Appalachian Trail (AT)
WV Dept. of Agriculture (WVDA)
VA. Dept. of Agriculture and Consumer Services (VDACS)
WVU Cooperative Extension Service
VPI & SU Cooperative Extension Service
USDA Animal & Plant Health Inspection Service (APHIS)
Westvaco Corporation
Glatfelter Pulp Wood Company
Environmental Action Foundation
VA Dept. of Forestry
WV Forestry Division
National Gypsy Moth Management Board

NEW FORMAT FOR DPN

Regular Demonstration Project News readers will notice some subtle changes in format beginning with this issue. These changes result from recommendations of the General Management Review (GMR) (See DPN Volume 3, Issue 4, April 1990), recommendations of the AIPM Steering Committee (See DPN Volume 3, Issue 3, March 1990), and the AIPM reader survey (DPN Volume 3, Issue 5, May 1990).

The GMR and the Steering Committee recommended that the DPN be specifically targeted to its audience. The reader survey revealed that most of you want to continue to receive the DPN and that most of you are involved, in various capacities, in land management and/or pest management.

Based on this information we have decided that our primary purpose will be to keep you updated on what is happening in AIPM as it relates to gypsy moth management. We have determined that there are other publications (such as the Gypsy Moth News[1]) to keep you informed about gypsy moth management in general. Therefore, the DPN will concentrate on information specific to AIPM.

The first change (that you will notice this month) is that the side bar describing the DPN, AIPM and the cooperators, has been moved from page 1 to page 3. In its place is a column by the Program Manager. This will be a permanent fixture. Starting in October, the DPN will feature monthly columns telling us what's going on in VDACS and WVDA and on the GW/JNF, and the MNF. The three park service cooperators, SNP, Blue Ridge Parkway, and New River Gorge will contribute columns on a rotating bases and other cooperators will be asked to contribute periodically.

Each issue will also feature one or two articles on the status of method improvement, pilot, intervention or technology development projects that are being conducted wholly or in part by AIPM. I hope you find the new format to your liking and as always I welcome any comments you have on it.

TERRY FREY, EDITOR

VIRGINIA COUNTY FAIRS

The AIPM display was at the following 1990 Virginia County Fairs:

Rockingham	Aug. 12 Thru 18
Page	Aug. 18 Thru 25
Albemarle	Aug. 28 Thru Sept. 1
Shenandoah	Aug. 27 Thru Sept. 1

Program Manager's Column . . .

continued from page 1

The direction for AIPM during the remainder of the project is clear. We will continue to emphasize methods improvement and pilot project activities. We will modify our survey and monitoring systems to bring them in line with the newly-adopted zonal approach. We will continue to minimize gypsy moth impacts and add emphasis to slowing the spread of the pest. Finally, we will continue to intensify our efforts to enhance our gypsy moth education and awareness program and improve the public involvement aspects of the project.

[1] *To receive this publication write;*
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NA State & Private Forestry
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